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Patent claims

1. A radial piston pump (1) for high-pressure fuel generation in fuel injection systems of internal combustion engines, in particular in a common rail injection system, having a drive shaft (4) which is mounted in a pump casing (2) and has an eccentric shaft section (6) on which a running roller (8) is mounted, and having preferably a plurality of pistons (16), which are arranged in a respective cylinder (14) radially with respect to the drive shaft (4) and each have a piston footplate (18), which makes contact with the circumferential surface (10, 12) of the running roller (8), at their ends facing the running roller (8), characterized in that at least that surface (28, 31) of the piston footplate (18) which is in contact with the circumferential surface (10, 12) of the running roller (8) consists of a wear-resistant material, namely of hard metal, a ceramic material, a cast carbide material, or cermet.

2. The radial piston pump as claimed in claim 1, characterized in that the piston footplate (18), on its surface (31) facing the running roller (8), bears at least one insert (30) made from the wear-resistant material.

3. The radial piston pump as claimed in claim 1 or 2, characterized in that the ceramic material contains silicon nitride (Si_3N_4) and has a surface roughness R_z of between 0.15 μm and 0.5 μm.

4. The radial piston pump as claimed in claim 1 or 2, characterized in that the hard metal contains G20, GC37 or GC20 and has a surface roughness R_z of between 0.3 μm and 1.0 μm.

5. The radial piston pump as claimed in claim 1 or 2, characterized in that the cast carbide material contains a chilled cast iron material, in particular GGH or SoGGH, and has a surface roughness R_z of between 0.5 μm and 2.0 μm.

6. The radial piston pump as claimed in at least one of the preceding claims, characterized in that the piston footplate (18), on its surface (31) facing the running roller (8), has at least two grooves (50) which cross one another.

7. The radial piston pump as claimed in claim 6, characterized in that one such groove (50) is in each case arranged in the center of a depression (39), forming a groove run-out, in the surface (31).

8. The radial piston pump as claimed in at least one of the preceding claims, characterized in that the surface of the piston footplate (18) and/or of the running roller (8) has a surface roughness R_z of between 0.15 μm and 2 μm.